



THE INDIUM CORPORATION OF AMERICA®\EUROPE®\ASIA-PACIFIC®
INDIUM CORPORATION (SUZHOU)®

SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1 **.Product Identifier:** INDIUM SULFAMATE PLATING BATH

SDS Number: SDS- IB002

Revised Date: 28 DECEMBER 2015

1.2 **Relevant identified uses of the substance or mixture and uses advised against**

Product Use: Industrial Use – Plating bath. Use includes surface preparations, decorative finishing on metals and plastics, sealing applications, use in aircraft bearings and electrical interconnections in microelectronic devices.

1.3 **Details of the supplier of the safety data sheet**

MANUFACTURER/SUPPLIER/IMPORTER:

In America:

The Indium Corporation of America
1676 Lincoln Ave., Utica NY 13502
Technical & Safety Information: (315) 853-4900
Safety & SDS Information: nswarts@indium.com
Corporation web page: <http://www.indium.com>

In Europe:

Indium Corporation of Europe
7 Newmarket Ct.
Kingston, Milton Keynes, UK, MK 10 OAG
Information: (normal business hours) +44 [0] 1908 580400
EU Contact: aday@indium.com

In China:

Indium Corporation (Suzhou) Co., Ltd.
No. 428 Xinglong Street
Suzhou Industrial Park
Suchun Industrial Square
Unit No. 14-C
Jiangsu Province, China 215126
Information: (86) 512-6283-4900

In Asia:

Indium Corporation of America
 Asia-Pacific Operations-Singapore
 29 Kian Teck Avenue
 Singapore 628908
 Information: +65 6268-8678

1.4 Emergency telephone number

FOR CHEMICAL EMERGENCY ONLY PHONE *:

CHEMTREC 24 hrs.

USA: 1 (800) 424-9300

Outside USA: +1 (703) 527-3887

*** Used only for spill/leak/fire/exposure/accident**

ALL OTHER INQUIRIES: TOLL FREE: +1-800-448-9240 Indium Corporation

2. HAZARDS IDENTIFICATION

PRIMARY ROUTES OF ENTRY:

Eye Inhalation Skin Ingestion NTP IARC OSHA Not Listed

Carcinogen listed in

2.1 Classification:

2.2 Label Elements

Labeling according to Regulation (EC) No. 1272/2008



Signal Word: Warning

Hazard statement(s)

- H303 May be harmful if swallowed
- H315 Causes skin irritation
- H319 Causes serious eye irritation
- H333 May be harmful if inhaled

Precautionary statement(s)

- P233 Keep container tightly closed
- P261 Avoid breathing dust/fume/gas/mist/vapours/spray
- P270 Do not eat, drink or smoke when using this product
- P273 Avoid release to the environment
- P280 Wear protective gloves/protective clothing/eye protection/face protection
- P362 + P364 Take off contaminated clothing and wash before reuse
- P301 +P314 IF SWALLOWED: Get medical advice/attention if you feel unwell
- P302 +P352 IF ON SKIN: Wash with plenty of soap and water
- P304 + 341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing

P305 + 351 IF IN EYES: Rinse continuously with water for several minutes (15 mins)

Skin irritant (Category 2)
Eye irritant (Category 2A)

2.3 OTHER HAZARDS:

POTENTIAL HEALTH EFFECTS:

Eye Contact: Causes eye irritation and possible burns.

Ingestion: May be harmful if swallowed. May cause burning and damage to mouth and digestive system.

Inhalation: May be harmful if inhaled. Possible damage to nasal and respiratory passages.

Skin Contact: Causes skin irritation or burns. May be harmful if absorbed through the skin.

Chronic: Kidney and liver damage from injecting indium compounds has been reported based on limited animal testing but no systematic effects from human exposure has been reported.

3. COMPOSITION / INFORMATION ON INGREDIENTS

3.2 Mixture:

Components	CAS Registry #/EINECS#				
INDIUM SULFAMATE	10.5	66027-93-8/266-072-2	N.E.	N.E.	N.E.
SODIUM CHLORIDE	4.6	7647-14-5/231-598-3	N.E.	N.E.	N.E.
SULFAMIC ACID	2.6	5329-14-6/226-218-8	N.E.	N.E.	N.E.
SODIUM SULFAMATE	14.9	13845-18-6/237-572-8	N.E.	N.E.	N.E.
DEXTROSE	0.8	50-99-7/200-075-1	N.E.	N.E.	N.E.
TRIETHANOLAMINE	0.23	102-71-6/203-049-8	-	5	-
REMAINING INGREDIENTS WATER					

N.E. = Not established

4. FIRST AID MEASURES

4.1 Description of first aid measures:

Eye Contact: Hold eyelids apart and flush eyes with plenty of tepid water for at least 15 minutes. Seek medical attention if irritation persists.

Ingestion: If patient is conscious, ONLY induce vomiting as directed by trained personnel. NEVER give anything by mouth to an unconscious person. Seek medical attention immediately.

Inhalation: Remove to fresh air. If not breathing, give artificial respiration or oxygen by trained personnel. Seek immediate medical attention.

Skin Contact: Remove contaminated clothing. Wash affected area with soap and water. Wash clothing before reuse. If irritation persists, obtain medical attention.

4.2 Most important symptoms and effect, both acute and delayed:

Skin contact may cause irritation.

Eye exposure may cause serious irritation.

4.3 Indication of any immediate medical attention and special treatment needed:

No specific special treatment information is available on this mixture. Review data provided in this document to understand the hazards when working with the product. No other information is available at this time. Seek medical attention if eye irritation continues after flushing. If respiratory discomfort is evident seek immediate medical advice.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing Media:

Use extinguishers appropriate for the surrounding fire conditions. Water, CO2, foam media.

5.2 Special hazards arising from the substance or mixture:

May produce toxic indium oxide fumes, if burning.

5.3 Advice for Firefighters

Fire-fighters must wear approved self-contained breathing apparatus and full protective clothing.

Material product is not flammable. However, dust in the air could generate a hazard. No other information is available.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel:

Keep away from the spill. Keep exhaust ventilation system running. In the event of a fire evacuate area.

For emergency responders:

Wear safety glasses, gloves when cleaning up any spill. Other equipment may be necessary based on the immediate area and other chemicals unrelated to the product that may be in use. Adequate ventilation should be available. Keep unnecessary personnel away from area during clean up. If on floor wear foot protection to avoid any direct contamination to shoes and boots. Avoid conditions that create fumes. Use an approved respirator with acid gas/particulate cartridge. Dust type masks are not recommended. Isolate the spill and clean up with absorbent or neutralize. Place in proper disposal container, such as plastic.

6.2 Environmental Precautions: Material may have reclaim value. If recycling cannot be done then dispose of material following all applicable governmental regulations.

6.3 Methods and material for containment and cleaning up:

Spill or leak procedures: Place into plastic pail or drum and tightly cap. Recycle material, if possible.

6.4 Reference to other sections: See Section 8 for exposure levels.

7. HANDLING AND STORAGE

7.1 Precautions

Keep containers tightly closed when not in use. Use care to avoid spills. Wear appropriate personal protective equipment (PPE) when working or handling material. Always thoroughly wash your hands after handling this product. DO NOT touch or rub eyes until hands are washed. Do not eat, drink or smoke when handling this product. Utilize exhaust ventilation during handling of this product.

7.2 Conditions for Safe Storage, including any incompatibilities:

Storage Precautions:

Store product in tightly capped original containers in a cool, dry area. Refer to product label and product data sheet for specific storage temperature requirements. Rotate stock to ensure use before expiration date.

7.3 Specific End Use(s): Not specified.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control Parameters:

			<u>TWA</u>	<u>STEL</u>
			mg/m ³	mg/m ³
<u>CAS#/EINECS#</u>				
INDIUM SULFAMATE	10.5	66027-93-8/266-072-2	N.E.	N.E.
SODIUM CHLORIDE	4.6	7647-14-5/231-598-3		
		Latvia	5	-
		Lithuania	5	-
		Russia	5	-
SULFAMIC ACID	2.6	5329-14-6/226-218-8	N.E.	N.E.
SODIUM SULFAMATE	14.9	13845-18-6/237-572-8	N.E.	N.E.
DEXTROSE	0.8	50-99-7/200-075-1	N.E.	N.E.
		Russia	10	-
TRIETHANOLAMINE	0.23	102-71-6/203-049-8		
		Belgium	5	-
		Spain	5	-
		Germany	5	-

Finland	5	-
Denmark	0.5 ppm/3.1 mg/m3	
Norway	5	10
Ireland	5	-
Czech	5	10
Estonia	5	10
Lithuania	5	10
Slovenia	5	-

REMAINING INGREDIENTS WATER

TWA= time weighted average
 STEL = short term exposure limit

8.2 Exposure Controls:

Engineering Controls: Local and/or Mechanical exhaust ventilation or point source exhaust is required to control any airborne contaminants and to reduce potential exposures to workers. Avoid inhalation of spray. Use exhaust when there is any doubt in whether the operator/user is getting any exposure.

Personal protection:

Eyes: Chemical safety glasses/goggles. Face shield for splash/spray hazard.

Respiratory: An approved air-purifying respirator (half or full face) with an acid gas/HEPA rated particulate filter is required under certain circumstances where airborne concentrations are expected to be elevated.

Skin: Compatible chemical resistant gloves (rubber/vinyl gloves). Avoid direct skin contact.

Other: Lab coat, eye-wash fountain in work area. Avoid the use of contact lenses in high fume areas.

Work/Hygienic Practices:

Maintain good housekeeping. Clean up spills immediately. Good personal hygiene is essential. Avoid eating, smoking or drinking in the work area. Wash hands thoroughly with soap and water immediately upon leaving the work area. Do not wear work clothes into lunchroom areas.

Refer to the Indium Corporation’s Application Notes: *Proper Surface Preparation for Indium Plating.*

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

Appearance:	Clear/Amber Liquid	Boiling Point/Range: Not established
Odor:	Odorless	Melting Point/Freezing Point: Not available

Odor Threshold:	Not established	Evaporation Rate:	Not applicable
Specific Gravity:	(H ₂ O=1).	pH:	2 (Corrosive)
Vapour Pressure:	Not available	Solubility in Water:	Soluble
Vapour Density:	(air=1) Not available	Partition coefficient:	Not established
Relative Density:	Not established	Flammability:	Not applicable
Flash Point:	Not applicable	Method:	Not applicable
Auto-ignition Temperature:	Not applicable	Flammable Limits:	Limits not established
UEL/LEL Limits:	Not applicable	Decomposition Temp:	Not applicable
Viscosity:	Not established	Explosive properties:	Not applicable
Oxidizing Properties:	Not established		

Other Information: When using the product the pH is adjusted as needed. Review the Product Data sheet for proper use of the plating bath solution. Preferred pH is 1.5-2.

10. STABILITY AND REACTIVITY

- 10.1 **Reactivity:** Stable.
- 10.2 **Chemical Stability:** Stable
- 10.3 **Possibility of Hazardous Reactions:** Not established
- 10.4 **Conditions To Avoid:** Not established
- 10.5 Incompatible Materials:** Avoid contact with strong oxidizing agents.
- 10.6 **Hazardous Decomposition /Combustion:**
Harmful toxic oxide fumes may form at elevated temperatures.
- 10.7 **Hazardous Polymerization:** Will not occur.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

Acute toxicity:	Not established	Mutagenicity:	Not established
Irritation:	Not established	Toxicity for Reproduction:	Not Established
Corrosivity:	Not applicable	Absence of specific data:	None available (not tested)
Sensitization:	Not available		
Repeated dose toxicity:	Not established		
Carcinogenicity:	Not established		
Likely Routes of Entry:	eyes(serious irritation) /skin (irritation) /inhalation (irritation)		
Interactive effects:	None known		

Symptoms related to the physical, chemical and toxicological characteristics: May cause irritation by skin and inhalation. Causes serious eye irritation.

Delayed and immediate effects as well as chronic effects from short and long-term exposure: None known

Mixture verses substance information: None known

Other Information:

Carcinogenicity:	NTP: No (National Toxicity Program)
Listing	OSHA: No (US Occupational Safety & Health Administration)
	IARC: No (U.N. International Agency for Research on Cancer)

12. ECOLOGICAL INFORMATION

- 12.1 **Toxicity:** No information available
- 12.2 **Persistence and degradability:** No information available
- 12.3 **Bioaccumulative potential:** No information available
- 12.4 **Mobility in soil:** No information available
- 12.5 **Results of PBT and vPvB assessments:** No data is available
- 12.6 **Other adverse effects:** No information is available for mixture. Avoid release to environment.

13. DISPOSAL CONSIDERATION

13.1 **Waste treatment method:**
Scrap Indium has reclaim/recycle value. Contact recycler. Otherwise, dispose of in accordance with environmental regulations. Containerize material and classify according to applicable regulations. No pre-treatment on site is recommended. Do not dispose of down any drain or waterway. Utilize the same personal protective equipment as the user when handling for disposal.

RoHS (Restriction of Hazardous Substances): Compliant with RoHS.

14. TRANSPORT INFORMATION

Transport in accordance with applicable regulations and requirements.

Hazardous.

- 14.1 **UN proper shipping name:** 3264
- 14.2 **Transport hazard class(s):** 8
- 14.3 **Packing group:** III
- 14.4 **Environmental hazards:** None
- 14.5 **Special precautions for user:** None
- 14.6 **Transport in bulk:** Not applicable

Marine pollutant: No

Shipping Name: UN 3264, Corrosive Liquid, Acidic, Inorganic, N.O.S., 8, PGIII (sulfamic acid, indium sulfamate mixture)



15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:

The information in this Safety Data Sheet meets the requirements of the United States Occupational Safety and Health Act and regulations promulgated hereunder (29 CFR 1910.1200 ET. SEQ.).

All ingredients are listed on the USEPA TSCA Inventory.

All ingredients are listed on EINECS.

Safety data sheet was developed using EC 1907/2006 amended as of 20 May 2010 EU No 453/2010 and information as stated under regulation EC No 1272/2008 CLP Regulation.

GHS = Global Harmonized System

CLP= Classification, labeling and packaging

Product does not contain any substances ozone depleting substances and therefore not subject to EC 2037/2000.

15.2 Chemical safety assessment: None performed for mixture.

16. OTHER INFORMATION

NOTE: The Indium Corporation does not recommend, manufacture, market or endorse any of its products for human consumption.

Revised Date: 28 DECEMBER 2015
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Changes provided on this SDS were based on the requirements of EU No. 453/2010 of May 20, 2010 regarding amendments to EC No. 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH).

The information and recommendations contained herein are, to the best of The Indium Corporation of America's knowledge and belief, accurate and reliable as of the date issued. The Indium Corporation of America does not warrant or guarantee their accuracy or reliability, and The Indium Corporation of America shall not be liable for any loss or damage arising out of the user thereof. The information and recommendations are offered for the user's consideration and examination, and it is the user's responsibility to satisfy itself that they are suitable and complete for its particular use. If buyer repackages this product, legal counsel should be consulted to insure proper health, safety and other necessary information is included on the container.